

Serial No. 10/663,949
Atty. Doc. No. 2003P07614US

REMARKS

Claims 1-18 are presented for examination. Claims 19-22 have been withdrawn pursuant to the earlier restriction requirement. Claims 1, 16 and 17 have been amended, and no claims have been added or canceled, by way of this response. Applicants respectfully request reconsideration and allowance of the pending claims in view of the foregoing amendments and following remarks.

Response To Rejections Under Section 102:

Claims 1-4, 12 and 15-17 stand rejected under 35 U.S.C. § 102(b), the Examiner contending that these claims are anticipated by Ramanarayanan (High Temperature Ion Conducting Ceramics).

Applicants' claims, as amended, recite a tubular solid oxide fuel cell comprising a ceramic-metal fuel electrode having a microstructure characterized by accumulated molten particle splats. Support for this amendment can be found in the specification, e.g. page 15 lines 13-16. Ramanarayanan does not teach or suggest a fuel electrode having a microstructure characterized by accumulated molten particle splats (which would be caused by plasma spraying). Ramanarayanan page 23 last paragraph discloses that Applicants' assignee pioneered the tubular fuel cell design and that the electrolyte of such fuel cell is fabricated by electrochemical vapor deposition (EVD). Ramanarayanan continues that electrolyte deposition by more cost-effective non-EVD techniques, such as plasma spraying or colloidal/electrophoretic deposition followed by sintering, is being investigated (but not by whom). Applicants

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respectfully note that Ramanarayanan was published in Summer 2001 and George Folser's Invention Disclosure, disclosing fuel electrode plasma spraying deposition, was signed March 2, 2001.

Claims 1-5, 7-10 and 12-15 stand rejected under 35 U.S.C. § 102(b), the Examiner contending that these claims are anticipated by Clemmer (Influence of Nickel Distribution on the Processing and Properties of Porous Metal/Ceramic Composite Fuels).

Applicants' claims, as amended, recite a tubular solid oxide fuel cell comprising a ceramic-metal fuel electrode having a microstructure characterized by accumulated molten particle splats. Clemmer discloses the influence nickel distribution has on the microstructure, porosity, sintering shrinkage, coefficient of thermal expansion, and electrical conductivity of porous nickel/yttria-stabilized zirconia composite fuel electrodes. Clemmer page 320 Experimental Procedure fabricates the fuel electrode by tape casting suspension.

Claims 1-8 and 12-18 stand rejected under 35 U.S.C. § 102(b), the Examiner contending that these claims are anticipated by USPN 5,589,285 (Cable).

Applicants' claims, as amended, recite a tubular solid oxide fuel cell comprising a ceramic-metal fuel electrode having a microstructure characterized by accumulated molten particle splats. Cable 8:30-35 teaches that a very thin fuel electrode interfacial layer 19 (not the fuel electrode 4) may be formed by other techniques such as plasma deposition, spin casting, spraying or screen printing. Cable also goes into significant detail distinguishing its planar fuel cell design from the claimed tubular fuel cell design, explaining that its invention is directed to

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fuel cells which are tolerant of sulfur-bearing fuels (1:15-17) and that tubular fuel cells are intolerant of sulfur bearing fuels (1:25-30, 1:55-2:59).

Response To Rejections Under Section 103:

Claims 5-6, 11 and 16-17 stand rejected under 35 U.S.C. § 103(a), the Examiner contending that these claims are obvious over Clemmer in view of what would have been obvious to one of ordinary skill in the art at the time of Applicants' invention. Claims 5-8 stand rejected under 35 U.S.C. § 103(a), the Examiner contending that these claims are obvious over Ramanarayanan in view of Jenson. Claims 9-11 stand rejected under 35 U.S.C. § 103(a), the Examiner contending that these claims are obvious over Ramanarayanan in view of Clemmer as evidenced by INCO Ltd. Claims 13 and 14 stand rejected under 35 U.S.C. § 103(a), the Examiner contending that these claims are obvious over Ramanarayanan in view of what would have been obvious to one of ordinary skill in the art at the time of Applicants' invention. Claim 18 stands rejected under 35 U.S.C. § 103(a), the Examiner contending that these claims are obvious over Ramanarayanan in view of Cable.

In view of the amendments and arguments discussed in connection with the Section 102 rejection, Applicants respectfully request reconsideration and withdrawal of the Section 103 rejections.

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Conclusion

For the foregoing reasons, it is respectfully submitted that the rejections set forth in the outstanding Office Action are inapplicable to the present claims. Accordingly, Applicants respectfully request that the Examiner reconsider the rejections and timely pass the application to allowance. Please grant any extensions of time required to enter this paper. The commissioner is hereby authorized to charge any appropriate fees due in connection with this paper, including the fees specified in 37 C.F.R. §§ 1.16 (c), 1.17(a)(1) and 1.20(d) for total independent claims in excess of 3, or credit any overpayments to Deposit Account No. 19-2179.

Respectfully submitted,

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